

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/NZ03/00119

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>												
Int. Cl. <sup>7</sup> : C12Q 1/68 C12N 15/11 C12N 15/31												
According to International Patent Classification (IPC) or to both national classification and IPC												
<b>B. FIELDS SEARCHED</b>												
Minimum documentation searched (classification system followed by classification symbols) SEE ELECTRONIC DATABASES												
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched SEE ELECTRONIC DATABASES												
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DGENE (Seq ID No 1 and 2); Pubmed, USPTO internet search (mycobacterium, paratuberculosis, sheep, cattle)												
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>												
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
P/X	EP1223225 A (STICHTING NEDERLANDS INSTITUUT VOOR ZUIVELONDERZOEK) 17 July 2002. (See description, also Seq ID No 3)	3-5, 12, 13, 9, 14-21, 34, 35, 37, 39										
X	Coetsier, C. <i>et al.</i> 2000. Duplex PCR for differential identification of <i>Mycobacterium bovis</i> , <i>M. avium</i> , and <i>M. avium</i> subsp. <i>Paratuberculosis</i> in formalin-fixed paraffin-embedded tissues from cattle. <i>Journal of Clinical Microbiology</i> . 38(8):3048-3054. (See whole document)	12, 13										
X	Whittington, R.J. <i>et al.</i> 2000. Molecular epidemiology of <i>Mycobacterium avium</i> subsp. <i>Paratuberculosis</i> : IS900 restriction fragment length polymorphism and IS1311 polymorphism analyses of isolates from animals and a human in Australia. <i>Journal of Clinical Microbiology</i> . 38(9):3240-3248. (See whole document)	12, 13										
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex												
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&amp;" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention											
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone											
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art											
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family											
"P" document published prior to the international filing date but later than the priority date claimed												
Date of the actual completion of the international search 7 August 2003		Date of mailing of the international search report 18 AUG 2003										
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929		Authorized officer  DAVID OLDE Telephone No. (02) 6283 2569										

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>Bull, T.J. <i>et al.</i> 2000. Characterization of IS900 loci in <i>Mycobacterium avium</i> subsp. <i>Paratuberculosis</i> and development of multiplex PCR typing. Microbiology. 146:2185-2197.</p> <p>(See whole document)</p> <p>And, GenBank database accession No. AJ250016.</p> <p>Bull, T.J. <i>et al.</i> <i>Mycobacterium avium</i> subsp. <i>Paratuberculosis</i> insertion sequence IS900, Locus 2. 26 September 2000.</p> <p>And, GenBank database accession No. AJ011838.</p> <p>Bull, J. <i>et al.</i> <i>Mycobacterium avium paratuberculosis</i> alkA (partial), hed, p43 and ogt. 26 September 2000.</p>	3-5, 9, 12-21, 34, 35, 37, 39
X	<p>US5968815 A (Murray <i>et al.</i>) 19 October 1999.</p> <p>(See Seq ID No 8)</p>	3-5
X	<p>Bauerfeind, R. <i>et al.</i> 1996. Molecular characterization of <i>Mycobacterium paratuberculosis</i> isolates from sheep, goats, and cattle by hybridization with a DNA probe to insertion element IS900. Journal of Clinical Microbiology. 34(7):1617-1621.</p> <p>(See whole document)</p>	12, 13
X	<p>EP0288306 B (BIOSCIENCE INTERNATIONAL INC) 13 December 1995.</p> <p>(See description, also Figure 4)</p>	3-5
X	<p>AU632383 B (MASSEY UNIVERSITY) 23 May 1991.</p> <p>(See description, also Fig 2)</p>	3-5
T	<p>Collins <i>et al.</i> 2002. <i>Mycobacterium avium</i> subsp. <i>Paratuberculosis</i> strains from cattle and sheep can be distinguished by a PCR test based on a novel DNA sequence difference. Journal of Clinical Microbiology. 40(12):4760-4762.</p> <p>See whole document.</p>	1-40

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
EP	288306	AU	16286/88	CA	1340172	DK	5242/89
		EP	356450	NO	885756	NZ	224351
		US	5225324	WO	8808456		
AU	632383	NZ	231429				
US	5968815	EP	666917	FR	2682967	NZ	244901
		WO	9308284				
EP	1223225	NONE					
END OF ANNEX							